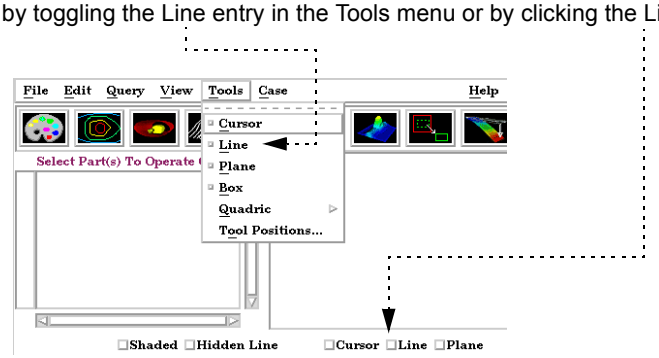
Introduction

EnSight provides a 3D linear specification tool called the “Line” tool. When visible, the Line tool appears as a (typically white) line with a cross at the center point. The Line tool is used to supply EnSight with a linear specification, for example to specify the location for a line clip or a “rake” for a particle trace.

Basic Operation

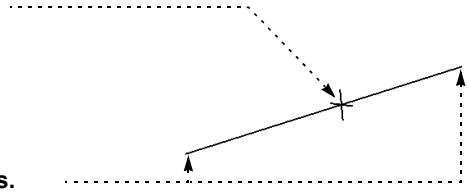
In many cases, the Line tool will automatically turn on when performing some function that requires it. You can also turn the tool on and off manually by toggling the Line entry in the Tools menu or by clicking the Line toggle on the Desktop.



The Line tool can be placed in three ways: interactively through direct manipulation of tool “hotpoints” with the mouse, by positioning the mouse pointer over a part and typing the ‘p’ key, or precisely positioned by typing coordinates into a dialog.

To move the Line with the mouse:

1. **Place the mouse pointer over the center of the tool.**
2. **Click (and hold) the left mouse button.**
3. **Drag the Line to the desired location.**
4. **Release the mouse button.**



To stretch the Line with the mouse:

1. **Place the mouse pointer over one of the Line endpoints.**
2. **Click (and hold) the left mouse button.**
3. **Drag the endpoint to the desired location.**
4. **Release the mouse button.**

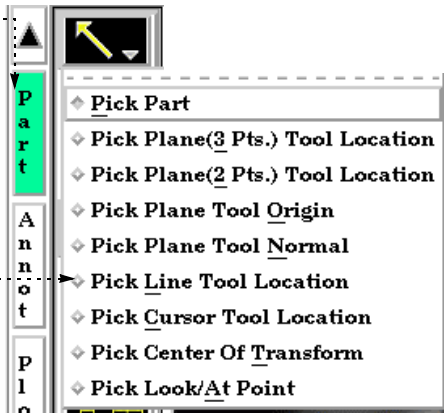
(Undo/Redo button at the bottom of screen can be used to undo/redo the tool transformation)

Line moving and stretching is restricted to the plane perpendicular to your line of sight. If you need to move the Line in another plane, rotate the model such that the desired translation plane is perpendicular to your new line of sight. (Note that the Line will not exactly track the location of the mouse pointer.)

To position the Line on a part with the 'p' key:

1. **Click the Part mode button.**

2. **Click the Pick Pull-down and select "Pick Line Tool Location" from the pop-up menu.**

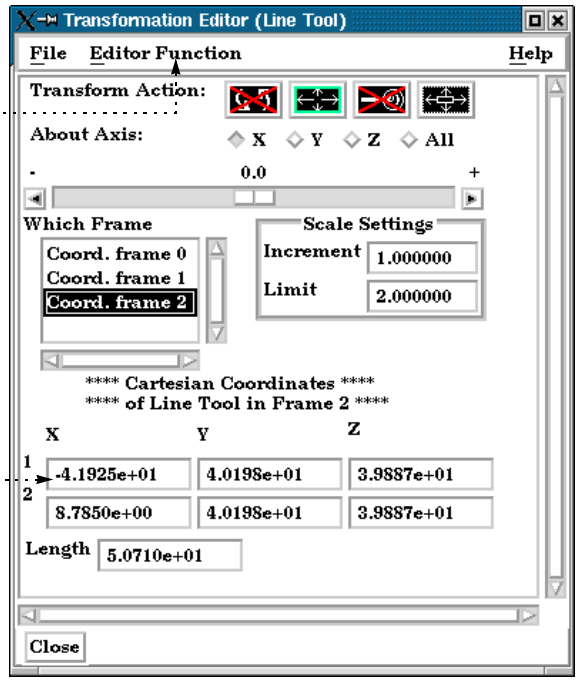


3. **In the Graphics Window, place the mouse pointer on a part over the desired location for the first Line endpoint and press the 'p' key. Move the mouse pointer to the desired location for the second Line endpoint and again press the 'p' key.**

To set the Line by specifying coordinates:

1. **Open the Transformation Editor dialog by clicking Transf. Edit... on the desktop.**

2. **Select Editor Function > Tools > Line.**



3. **Enter the desired coordinates for the endpoints into the X, Y, and Z fields and press return.**

You can also move the Line by setting the desired axis of translation in the Axis pop-up and manipulating the slider bar. In this case, the values in the "Scale Settings" section control the sensitivity and limit of the slider action.

Note that you can also use this dialog to view (rather than set) the position of the Line since the X,Y,Z numeric values always update to reflect the current location. If you are positioning the Line interactively with the mouse, the values will update when the mouse button is released.

Advanced Usage

After a model has been loaded, the initial location of the Line center is set to the “look-at” point – the geometric center of all visible geometry and parallel to the X axis. The coordinates of the Line are specified with respect to the default frame: frame 0. However, if you have created additional **frames**, you can position the Line relative to the origin of a different frame. This is accomplished by selecting the desired frame in the “Which Frame” list in the Transformation Editor dialog.

You can easily reset the position and orientation of the Line tool to the default. See **How To Reset Tools and Viewports** for more information.

Positioning a 3D tool with a 2D device (the mouse) can be difficult. Multiple **viewports** are sometimes helpful in positioning tools since you can see the tool simultaneously from multiple vantage points.

To find the distance between two nodes that have IDs, you can use the calculator function Dist2Nodes. However, to find the distance between two nodes on different parts, or between two nodes if one or both don’t have IDs, use the line tool. First drag down to Pick Line Tool Location on the pick part icon to the left of the GUI screen, then move the cursor over the first location, hit ‘p’ key, move to the second location and hit the ‘p’ key, then open up the transformation editor and in the transformation editor menu, Edit>Tools>Line you’ll find the length of the line tool which is the distance between those two points.

See Also

Other tools: **Cursor**, **Plane**, **Box, Cylinder**, **Sphere**, **Cone**, **Surface of Revolution**. See the How To article on **Frames** for additional information on how frames effect tools.

User Manual: **Tools Menu Functions**